

*PlayChoice*TM

KIT MANUAL

The Nintendo logo is centered within a black-outlined oval. The word "Nintendo" is written in its signature stylized font, with a registered trademark symbol (®) positioned above the letter "o".

Nintendo®

FOR INSTALLATION IN

VS. UniSystem®

WARNING

If the replacement parts and components in this PlayChoice™ kit are not installed exactly as instructed herein, there may be radio frequency interference created in violation of F.C.C. class A standards.

WARNING

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a class A computing device pursuant to subpart J of part 15 of F.C.C. rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference; in which case, the user at his own expense will be required to take whatever measures may be required to correct the interference.

WARNING

Use of non-Nintendo parts or modifications to your PlayChoice™ parts and components may adversely affect the safety of your game, and may cause injury to your players.

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I. INTRODUCTION

PlayChoice™ Kit

This PlayChoice™ kit enables you to change any Vs. UniSystem* Upright into a single monitor PlayChoice™ Upright. This includes all Donkey Kong*, Donkey Kong Jr.*, Donkey Kong 3*, and Popeye** Uprights that have already been converted to a VS. Unisystem*

Before you begin, be sure you are properly prepared. Thoroughly read this Instruction Manual to familiarize yourself with the proper procedures. Make certain that you have all the tools necessary to complete the process.

If you have any questions, please call Nintendo Service at:

1-800-633-3236

* Donkey Kong, Donkey Kong Jr., Donkey Kong 3, and VS. UniSystem are registered trademarks of Nintendo of America Inc.

** A trademark of King Features Syndicate, Inc.

II. CONTENTS OF PLAYCHOICE KIT

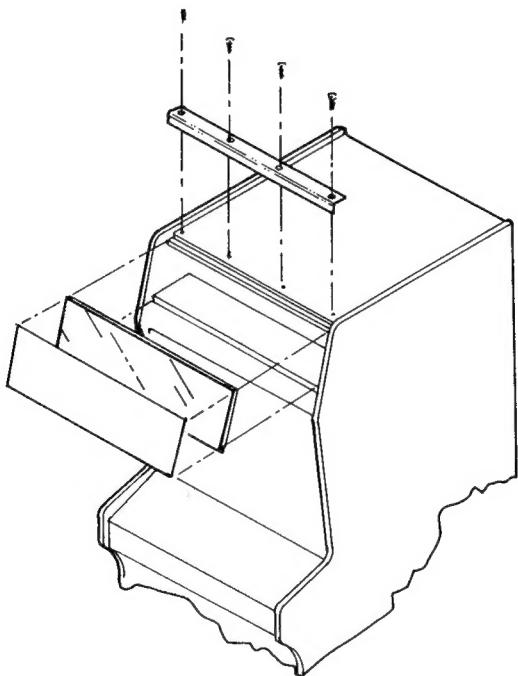
<u>Part Name</u>	<u>Quantity</u>	<u>Remarks</u>
PCKG-UP Complete Control Panel Assy	1	
PCK-1 CPU PC Board Assy	1	
LED PC Board Assy	1	
PCKG Name Plate Plexiglass	1	
PCKG Name Plate Overlay	1	
PCKG Side Decal	2	
Card Spacer KGLS-4S	2	Black
LED PC Board Bracket	1	
UP 36P 080 Edge Harness	1	
PCK 1-UP Adjustment Label	1	W/Double Back Tape
PCKG1-UP-US Serial Number Plate	1	
FCC Class A Label	1	
CS-7 Screw Tie Down	3	
Wood Screw 3.5 x 13	5	
Wood Screw 3.1 x 10	4	
PCK Kit Manual	1	
PCKG-UP Authorized Sticker	1	
FBI Warning Label	1	
Cable Tie	3	

III. LIST OF TOOLS NEEDED

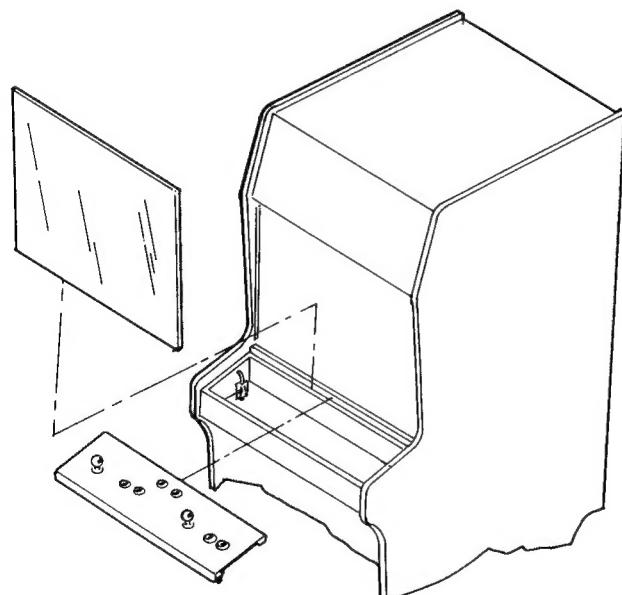
Phillips Screw Driver
Electric Reversing Drill
Phillips Bit (for drill)
Staple Gun
10mm Nut Driver or Adjustable Wrench

IV. REPLACEMENT PROCESS STEP-BY-STEP

1. Remove Marque/Header (see illustration 1-1)
 - A. Remove four (4) top trim screws.
 - B. Remove marque plexiglass.
 - C. Adhere PlayChoice™ overlay to new plexiglass.
 - D. Insert new PlayChoice™ marque/header into game.
 - E. Replace top trim and four (4) top trim screws.
2. Remove old Control Panel and Front Screen (see illustration 1-2)
 - A. Undo control panel hold-down clamps, (access through coin-mech door).
 - B. Disconnect harness and remove control panel.
 - C. Remove front screen.



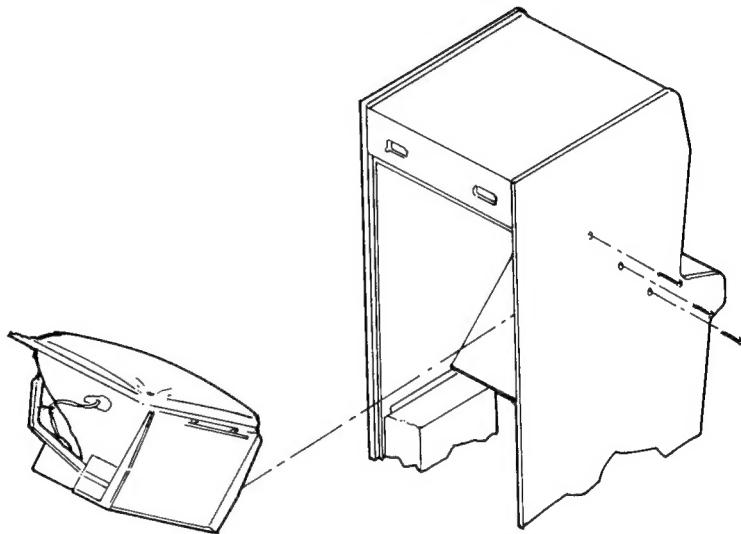
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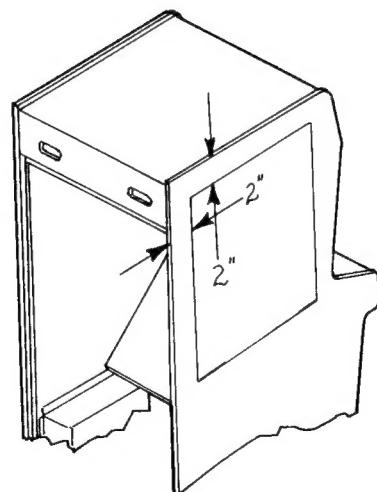
1 - 2

3. Replace Side Decals.
 - A. Remove back door.
 - B. Disconnect monitor wire harness connections.
 - C. Using Phillips driver and 10mm nut driver, remove four (4) M5 x 16 machine screws and six (6) carriage bolts and remove monitor (see illustration 1-3)
 - D. Remove old side decals.
 - E. Apply new PlayChoice™ side decal (see Decal Application sheet on Page 12 and Illustration 1-4)
 - F. Replace monitor.

IMPORTANT: Be sure to replace monitor grounding wire.

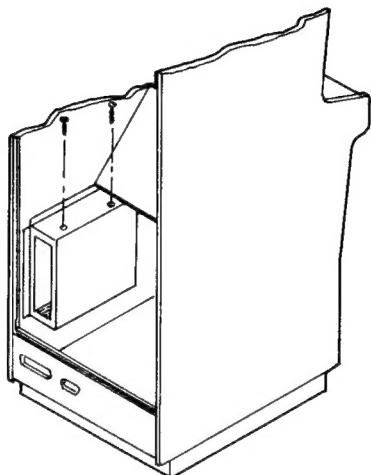


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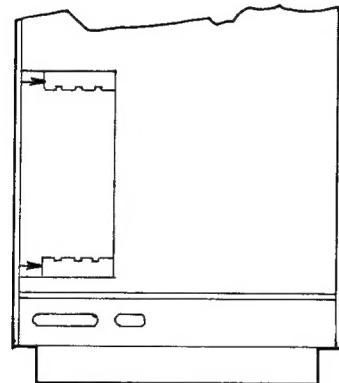


1 - 4

4. Remove old 36 pin edge harness, old PC Board and modify FCC cage.
 - A. Remove the 36 pin edge harness completely from game.
(This is the harness that connects to the top of the FCC Door)
 - B. Remove FCC Door.
 - C. Remove old PC Board.
 - D. Move the wood PC Board mounts (both top and bottom) to the far right of the FCC Cage if necessary. (see illustrations 1-5 & 1-6)



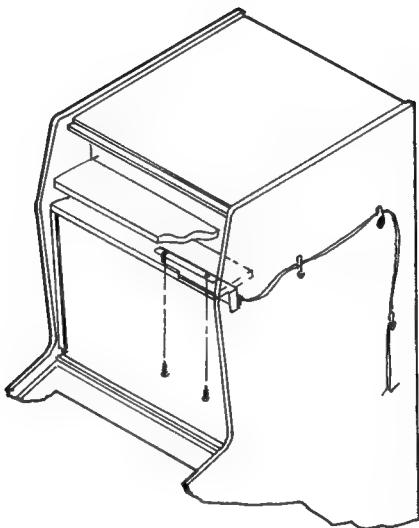
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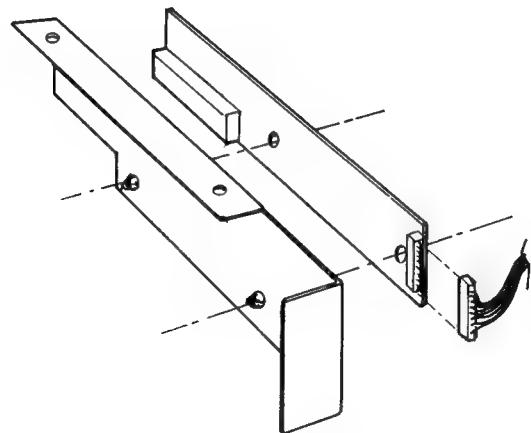
1 - 6

5. Mount LED Display

- A. Using two (2) 3.5 X 13 wood screws, fasten the LED PC Board bracket onto the upper right corner under the speaker grill and 1" back from the front screen. (see illustration 1-7)
- B. Attach the two (2) KGLS-4S Card Spacers to the LED PC Board. (see illustration 1-8)
- C. Connect the 12 pin connector from the new 36 pin edge harness to the LED PC Board. (see illustration 1-8)
- D. Attach the LED PC Board to the LED PC Board Bracket. (see illustration 1-8)
- E. Using three (3) 3.5 X 13 wood screws and three (3) CS-7 screw tie downs, fasten the wire harness as shown. (see illustration 1-7)



1 - 7



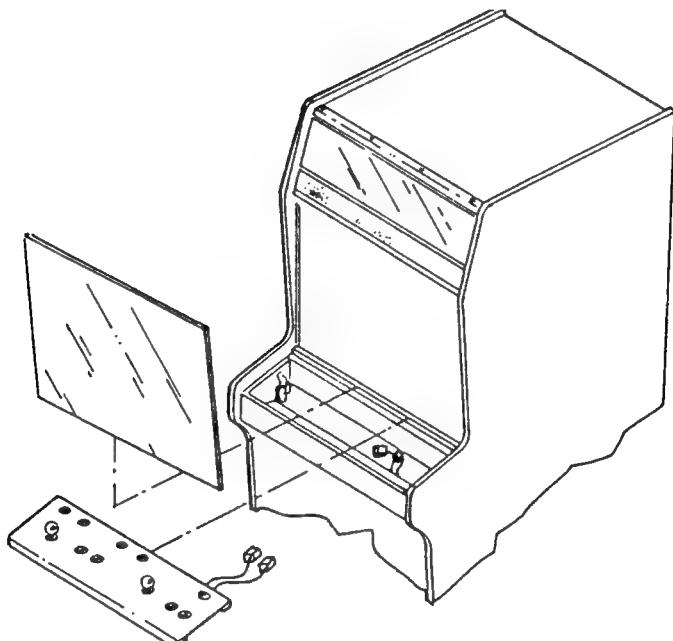
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6. Install Main PCB

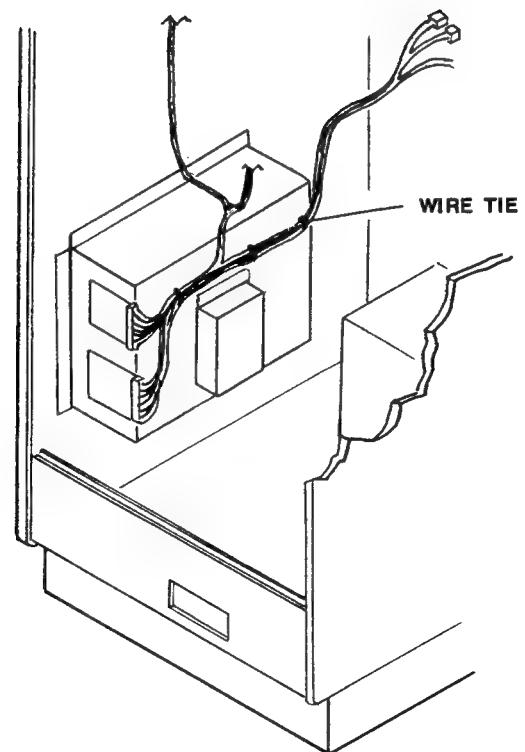
- A. Install PlayChoice™ game software into the main PlayChoice™ PC Board.
- B. Slide PC Board assembly into FCC cage with software cards pointing to the left.
- C. Connect the 36 pin and 44 pin short FCC harnesses from the FCC door to the main Playchoice™ PC Board.
- D. Attach the FCC door to the FCC cage.
- E. Attach the 36 pin and 44 pin main harness connectors to the FCC door.
- F. Route the 36 pin and 44 pin harness as shown (see illustration 1-10)

7. Replace Front Screen and Install new Control Panel

- A. Install the front screen.
- B. Connect the control panel wire harness and fasten down control panel. (see illustration 1-9)



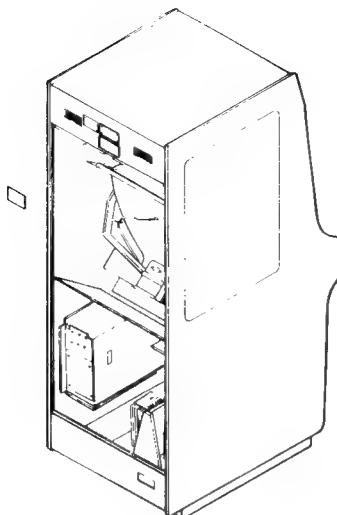
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1 - 10

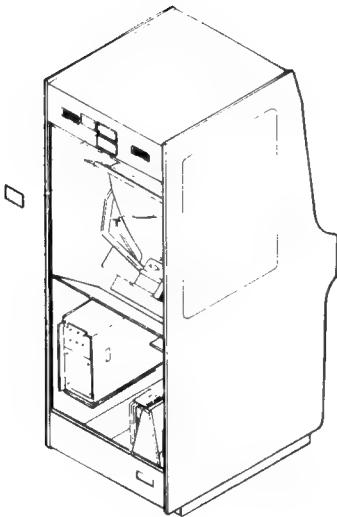
Note: Use the three (3) wire ties provided and attach the wire harnesses to the FCC cage as shown above.

8. Screw on new serial number plate next to old plate.
IMPORTANT! Do not remove old plate
(see illustration 1-11)



1 - 11

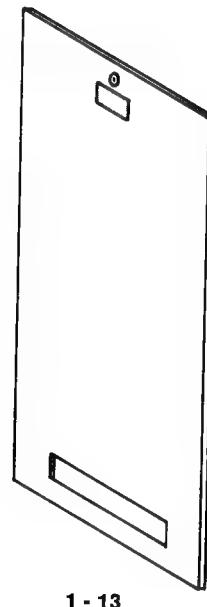
9. Attach FCC Class A label (see illustration 1-12)
 - A. Remove old FCC label
 - B. Put on new FCC label and staple all four corners



1 - 12

10. Attach FBI sticker

- A. Place label on back door just under lock (see illustration 1-13)
- B. Staple all four (4) corners



11. Install new PCK1-UP Adjustment Label

- A. Adhere label to inside surface of back door.
- B. Staple all four (4) corners

Side Decal Application

Step 1.

Start by peeling the protective backing "A" down about 6 inches from the top.

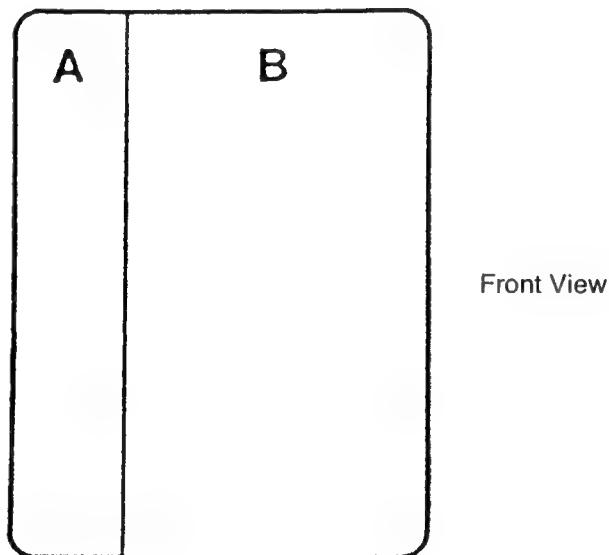
Place decal in desired position. Pull down slowly the remainder of the protective backing of "A."

While doing this, use a soft cloth to smooth decal onto side board, moving from top to bottom of decal.

Step 2.

Fold remaining decal back, exposing the unprinted side. Begin to peel protective backing "B" from center to right hand side "slowly."

Using soft cloth smooth decal onto side panel by running hand from top to bottom of decal, moving outward to the right hand side.

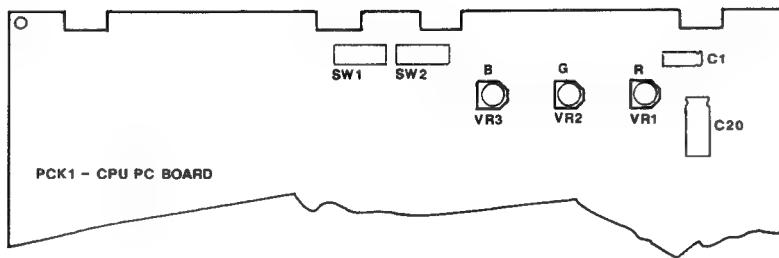


V. Final Check Sheet and Adjustments

- 1. New serial number plate installed (MANDATORY).
- 2. New FCC Label installed (MANDATORY).
- 3. PC Board adjustments made.
(See pc board adjustments page 13).
- 4. Monitor adjustments made
(See monitor adjustments page 14-16).
- 5. Coins give credit.
- 6. Controls on operation panel functioning.
- 7. Sound checked.
- 8. LED PC Board indicate player time.

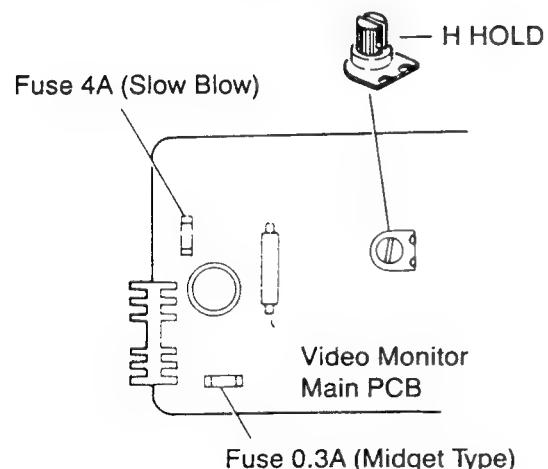
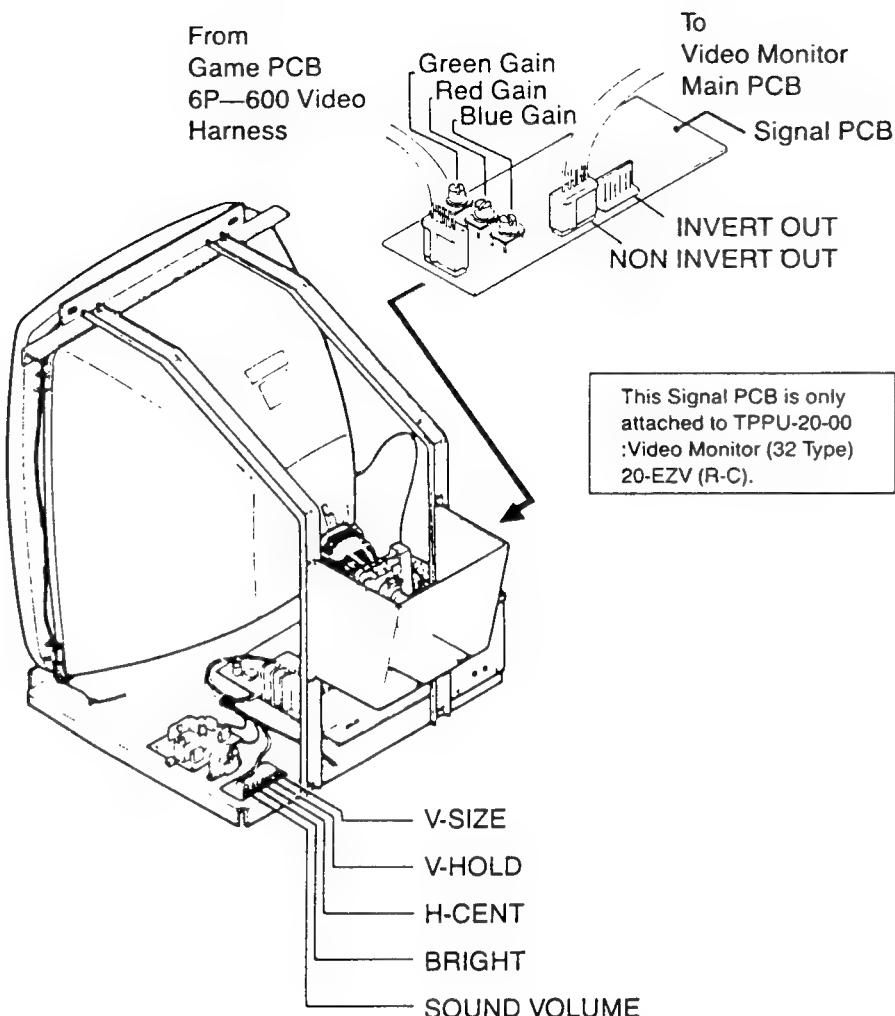
1. PCK-CPU PC BOARD

A Color Adjustment



The fixed variable registers (VR 1, VR 2, VR 3) have already been preset and do not need adjustment. If, however, color does not seem correct, VR1, VR2 and VR3 may be adjusted.

Adjustment of Video Monitor



WARNING

Do not touch the inside of the Video Monitor.
It contains many parts supplied with high voltage.

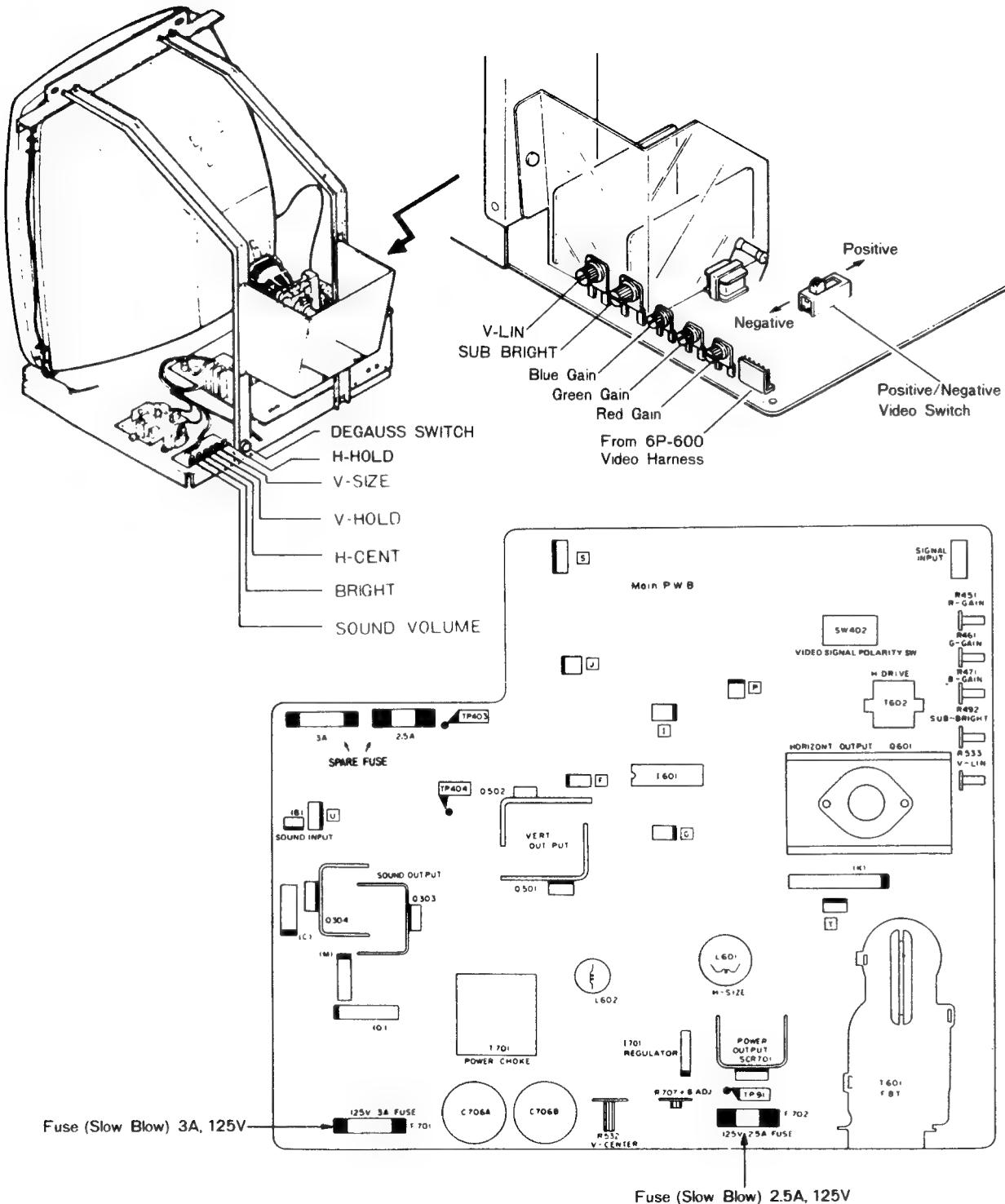


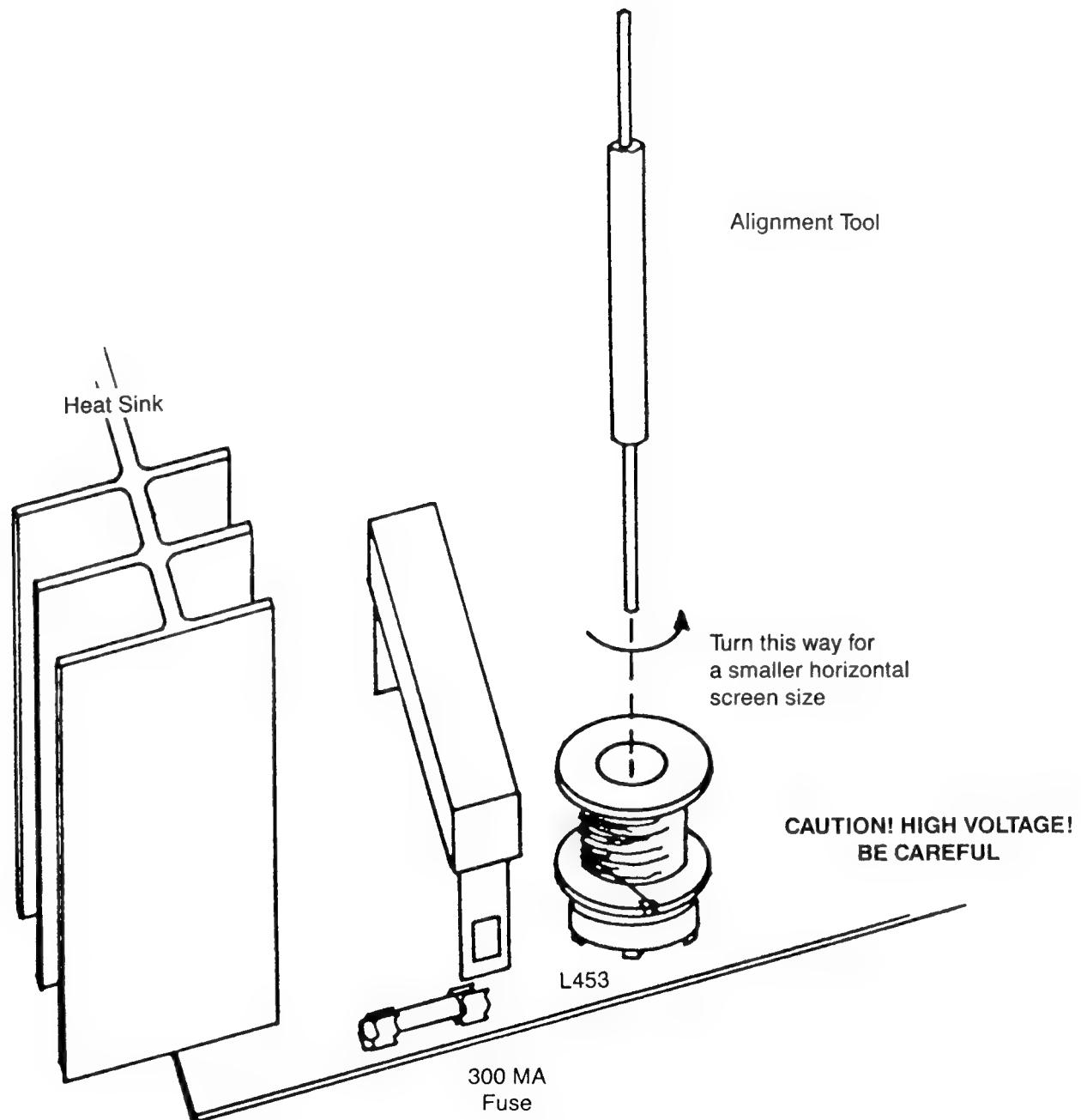
Fig. 6 Video Monitor : [Y51 Type] XM-2001N

WARNING

Do not touch the inside of the Video Monitor.
It contains many parts supplied with high voltage.

Adjustment of Horizontal Width

Using a standard 2.6mm hex non-conductive core alignment driver, carefully turn L453 counter-clockwise for a small horizontal screen size. L453 is located in the rear of the monitor just under the deflection yoke.



VIII. REORDER PARTS LIST

Main PC Board		
PART NO.	ORDER NO.	DESCRIPTION (Reference Designations and Locations)
PCKU-21-01	7929	PCK1 CPU Complete PCB Assembly
PCHU-21-11	946	Z80A Microprocessor
PCHU-21-12	945	RP2A03E Microprocessor
PCHU-21-13	4460	RP2C03B PPU
PCKU-21-14	7936	27128 16K-Byte EP-ROM 300ns PCK 1-C-8T
PCKU-21-15	7937	2764 8K-Byte EP-ROM 300ns PCK 1-C-8K
PCKU-21-16	7938	2764 8K-Byte EP-ROM 300ns PCK 1-C-8M
PCKU-21-17	7939	2764 8K-Byte EP-ROM 300ns PCK 1-C-8P
PCHU-21-18	2060	TMM2115BP-15 2K-Byte RAM 150ns
PCHU-21-19	2061	HM6116 ASP-20 2K-Byte RAM 200ns
PCHU-21-20	4811	TC5517 CPL-20 2K-Byte C-MOS RAM 200ns
PCKU-21-21	7940	N82SI29N 256x4-Bit Bipolar ROM PCK1-C-6D
PCKU-21-22	7941	N82SI29N 256x4-Bit Bipolar ROM PCK1-C-6E
PCKU-21-23	7942	N82SI29N 256x4-Bit Bipolar ROM PCK1-C-6F
PCHU-21-24	2189	74LS00 Quad 2-Input NAND
PCHU-21-25	2190	74LS02 Quad 2-Input NOR
PCHU-21-26	2191	74LS04 Hex Inverters
PCHU-21-27	2193	74LS08 Quad 2-Input AND
PCHU-21-28	2195	74LS11 Triple 3-Input AND
PCHU-21-29	2196	74LS14 Hex Schmitt Inverters
PCHU-21-30	2202	74LS32 Quad 2-Input OR
PCHU-21-31	2203	74LS42 4 To 10 Decoders
PCHU-21-32	2204	74LS55 2-Wide 4-Input AND-OR-INVERT Gates
PCHU-21-33	2205	74LS74A Dual "D" Flip-Flops (P, CL)
TPP2-06-20	2208	74LS86 Quad 2 Input EX-OR
PCHU-21-34	2210	74LS109A Dual J-K Flip-Flops (PLE, CL)
PCHU-21-35	2216	74LS139 Dual 2 To 4 Decoders
PCHU-21-36	2220	74LS157 Quad 2 To 1 Data Selectors
PCHU-21-37	2223	74LS161A 4-Bit Binary Counters
PCHU-21-38	2225	74LS164 8-Bit Shift Registers
PCHU-21-39	2226	74LS165A 8-Bit Shift Registers
PCHU-21-40	2228	74LS175 Quad "D" Flip-Flops (CL)
PCHU-21-41	2229	74LS194A 4-Bit Shift Registers
PCHU-21-42	2230	74LS240 Octal Bus Inverters (TS)
PCHU-21-43	2232	74LS244 Octal Buffers & Line Drivers (TS)
PCHU-21-44	2233	74LS245 Octal Bus Transceivers (TS)
PCHU-21-45	2235	74LS259 8-Bit Addressable Latches
PCHU-21-46	2239	74LS299 8-Bit Shift/Storage Registers
PCHU-21-47	2242	74LS367A Hex Bus Drivers
PCHU-21-48	2243	74LS368A Hex Bus Drivers
PCHU-21-50	2247	74LS377 Octal "D" Flip-Flops
PCHU-21-51	2267	74S04 Hex Inverters
PCHU-21-52	2259	7437 Quad-2-Input NAND Buffers
PCHU-21-53	2278	75471 Dual Peripheral AND Drivers
PCHU-21-54	4812	74HC10 Triple 3-Input NAND C-MOS
PCKU-21-55	8004	TC74HC373 Octal 3-State D-Latches C-MOS
PCKU-21-55	1143	PST518A Low Voltage Detector
PCHU-21-56	1445	LM324 Quad Operational Amplifiers
PCHU-21-57	1443	LM3900 Quad Operational Amplifiers

Main PC Board

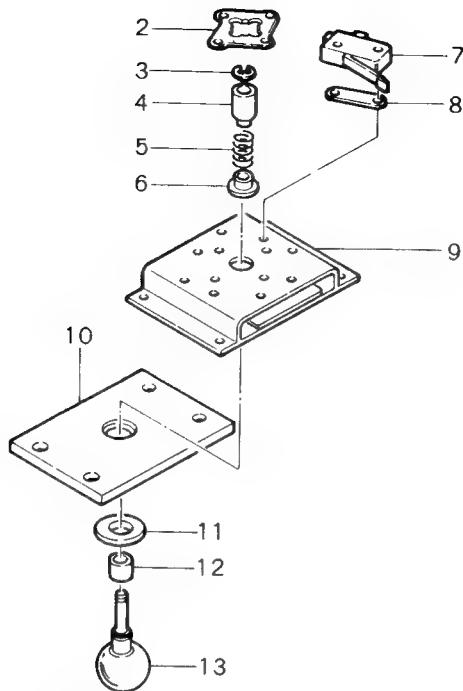
PART NO.	ORDER NO.	DESCRIPTION (Reference Designations and Locations)
PCKU-21-57	7943	TC 4053BP Triple 2-Channel Multiplexer C-MOS (5C)
PCHU-21-58	735	CD 406 6B Quad Analog Switches C-MOS (3C)
PCHU-21-59	2178	2SA933 Silicon PNP Transistor (Q11, Q12, Q14, Q15, Q17, Q18)
PCHU-21-60	2179	2SA1015 Silicon PNP Transistor (Q3, Q5, Q7, Q20)
PCHU-21-61	2184	2SC1740 Silicon NPN Transistor (Q8~Q10, Q13, Q16, Q19, Q20~Q26)
PCHU-21-62	2185	2SC1815 Silicon NPN Transistor (Q1, Q2, Q4, Q6)
PCHU-21-63	1003	ES1F Diode (D1)
PCHU-21-64	1012	1S5277B Diode (D3, D4)
PCHU-21-65	4813	EG01Y Diode (D2)
PCHU-21-66	1002	DAN401 Quad Cathode-Common Diode Array (DA1~DA8)
PCHU-21-67	4817	1.0f 5.5V Electric Double Layer Capacitor (EEC F5R 5U105) (C3)
PCHU-21-68	680	68pf 50V Ceramic-Disc Capacitor (C44)
PCHU-21-69	663	100pf 50V Ceramic-Disc Capacitor (C35, C36, C45, C71)
PCHU-21-70	669	180pf 50V Ceramic-Disc Capacitor (C11, C39)
PCHU-21-71	675	330pf 50V Ceramic-Disc Capacitor (C2, C6, C40, C41)
PCKU-21-71	7945	470pf 50V Ceramic-Disc Capacitor (C12)
PCHU-21-72	664	1000pf 50V Ceramic-Disc Capacitor (C5)
PCHU-21-73	665	0.01uf 50V Ceramic-Disc Capacitor (C4, C22, C38, C43, C80~C83, C86~C89, C91, C92, C94~C101, C103~C108, C110~C120, C122~C126, C128, C130~C144, C146, C148~C156, C158~C163, C165~C187)
PCHU-21-74	4815	0.047uf 50V Ceramic-Disc Capacitor (C15~C17)
PCHU-21-75	655	0.2uf 12VCeramic-Disc Capacitor (C21)
PCHU-21-76	716	0.047uf 50V Film Capacitor (C33, C34)
PCHU-21-77	685	1uf 16V Al Electrolytic Radial Cap. (C7, C8)
PCHU-21-78	689	3.3uf 16V Al Electrolytic Radial Cap. (C13, C14, C25, C28, C31, C32)
PCHU-21-79	683	10uf 16V Al Electrolytic Radial Cap. (C23, C24, C26, C27, C29, C30, C37, C42)
PCHU-21-80	688	33uf 16V Al Electrolytic Axial Cap. (C9)
PCHU-21-81	4818	47uf 16V Al Electrolytic Radial Cap. (C47~C50)
PCHU-21-82	684	100uf 16V Al Electrolytic Axial Cap. (C46)
PCHU-21-83	4819	100uf 25V Al Electrolytic Axial Cap. (C70)
PCHU-21-84	687	220uf 16V Al Electrolytic Axial Cap. (C1)
PCHU-21-85	691	470uf 16V Al Electrolytic Axial Cap. (C20)
PCHU-21-86	4820	3.3uf 16V Tantalum Electrolytic Cap. (C85, C90, C93, C102, C109, C121, C127, C145, C157)
PCHU-21-87	2075	0 Ohm Shunt Lead (R99)
PCHU-21-88	2076	10 Ohm 1/4W \pm 5% Resistor (R7)
PCHU-21-89	2120	33 Ohm 1/4W \pm 5% Resistor (R32, R37)
PCHU-21-90	2137	51 Ohm 1/4W \pm 5% Resistor (R8, R19, R23, R27, R31)
PCHU-21-91	2077	100 Ohm 1/4W \pm 5% Resistor (R17, R68, R69, R73)
PCHU-21-92	2082	110 Ohm 1/4W \pm 5% Resistor (R3)
PCHU-21-93	2121	330 Ohm 1/4W \pm 5% Resistor (R13, R14, R18, R21, R25, R29, R36, R90, R91, R97, R98, R110, R111, R112)
PCHU-21-94	2138	510 Ohm 1/4W \pm 5% Resistor (R46, R56, R66)
PCHU-21-95	2155	820 Ohm 1/4W \pm 5% Reisstor (R1, R2)
PCHU-21-96	2078	1K Ohm 1/4W \pm 5% Resistor (R94~R96, R120~R131)
PCHU-21-97	2099	2K Ohm 1/4W \pm 5% Resistor (R15, R87, R109)
PCHU-21-98	2105	2.2K Ohm 1/4W \pm 5% Resistor (R35, R40, R42, R50, R45, R52, R55, R60, R62, R65)
PCHU-21-99	2134	4.7K Ohm 1/4W \pm 5% Resistor (R43, R53, R63)
PCHU-21-100	2139	5.1K Ohm 1/4W \pm 5% Resistor (R4 ,R5, R22, R26, R30, R88, R89)
PCHU-21-101	2152	7.5K Ohm 1/4W \pm 5% Resistor (R16)

Main PC Board

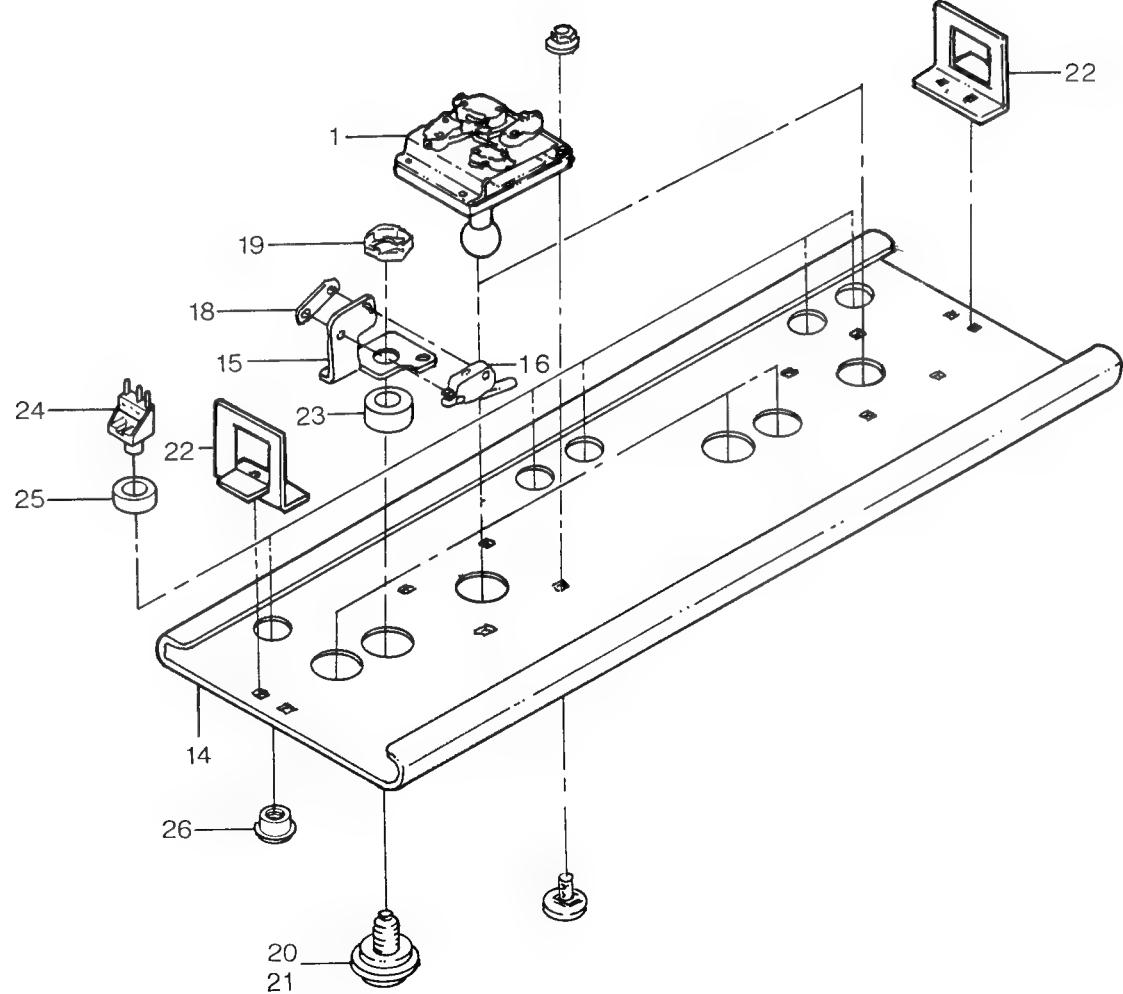
PART NO.	ORDER NO.	DESCRIPTION (Reference Designations and Locations)
PCHU-21-102	2079	10K Ohm 1/4W \pm 5% Resistor R51, R54, R61, R64, R74, R82, R83, R92, R93, R100~R102, R104, R106, R108) (R12, R34, R38, R41, R44,
PCHU-21-103	2086	12K Ohm 1/4W \pm 5% Resistor (R71)
PCHU-21-104	2100	20K Ohm 1/4W \pm 5% Resistor (R6, R39, R70, R72, R103, R, 105, R107)
PCHU-21-105	2080	100K Ohm 1/4W \pm 5% Resistor (R33, R75)
PCHU-21-106	2101	200K Ohm 1/4W \pm 5% Resistor (R9~R11)
PCHU-21-107	2126	360K Ohm 1/4W \pm 5% Resistor (R79)
PCHU-21-108	2154	750K Ohm 1/4W \pm 5% Resistor (R78, R80, R84)
PCHU-21-109	2081	1M Ohm 1/4W \pm 5% Resistor (R76, R85)
PCHU-21-110	2097	1.8M Ohm 1/4W \pm 5% Resistor (R81)
PCHU-21-111	2107	2.2M Ohm 1/4W \pm 5% Resistor (R77, R86)
PCHU-21-112	2068	Hex 5.1K Ohm Series Resistor Array (RM1, RM16)
PCHU-21-113	2065	Octal 1K Ohm Series Resistor Array (RM5, RM8~RM10, RM13)
PCHU-21-114	2071	Quad 68 Ohm Parallel Resistor Array (RM6, RM7, RM11, RM12, RM14, RM15)
PCHU-21-115	4821	NT-01 Resistor Array (RM2~RM4)
PCHU-21-116	2290	500 Ohm Variable Resistor, Red Cap (VR1)
PCHU-21-117	2289	500 Ohm Variable Resistor, Green Cap (VR2)
PCHU-21-118	2279	500 Ohm Variable Resistor, Blue Cap (VR3)
PCHU-21-119	2411	8MHZ Crystal (X1)
PCHU-21-121	2414	21.47727 MHz Crystal (X2, X3)
PCHU-21-123	2174	8-Station, Single-Throw, DIP Bit Switch (SW1, SW2)
PCHU-21-124	4823	MINI-BIT Header (SW3)
PCHU-21-125	2166	16 Pin DIP IC Socket (S6~S8)
PCHU-21-126	2171	28 Pin DIP IC!Socket (S2~S5)
PCHU-21-127	2172	40 Pin DIP IC Socket (S1, S9, S10)
PCHU-21-129	4880	96 Pin DIN Connector Receptacle (CH1~CH10)
PCHU-21-130	4825	GL-3HD1 Visible Light Emitting Diode (LED1)

OPERATION PANEL ASSEMBLY

ITEM	PART NO.	ORDER NO.	DESCRIPTION
1	MDST-14-12	773	8 Way Control Lever Assembly
2	TNX-23-18	808	8 Way Guide Plate
3	TKGU-23-23	813	E Ring 4
4	TKGU-23-21	811	Switch Collar
5	TKGU-23-22	812	Lever Spring
6	TKGU-23-20	810	Spring Stopper
7	TKGU-23-13	804	Micro Switch
8	TKGU-23-17	807	Switch Spacer
9	TKGU-23-16	806	Bearing Bracket
10	TMAU-12-15	784	Lever Plate
11	TMAU-12-14	783	Control Knob Plate
12	TMAU-12-16	785	Control Knob Collar 8L
13	TMAU-11-18	778	Knob with Shaft 80.5L
14	PCKG-12-11	7928	Operation Panel Base
15	TKGU-23-12	803	Switch Button Bracket
16	TMAU-34-18	821	Micro Switch VL 12L (Straight)
17	MDSU-12-17	896	Black Sponge, 2 x 10 x 580L
18	TKGU-23-26	814	Nut Plate
19	TKGU-23-34	818	Pal Nut M16
20	MDST-12-21	932	Button Assembly (Black)
21	MDST-12-17	854	Button Assembly (Crimson)
22	TMAK-11-19	865	Operation Panel Fastener
23	TMAU-12-18	943	Collar — 34 x 28 x 7H
24	MDSA-23-31	935	Micro Switch P163C3RU (Red)
25	MDSA-23-29	933	062U Switch Collar
26	MDSA-23-30	934	062U Switch Bezel



1 : A8 Control
Lever Assembly



Operation Panel Assembly

PCK1 - LED PCB Assembly: PARTS LIST

PART NO.	ORDER NO.	DESCRIPTION (Reference Designations)	
PCKU-24-01	7930	PCK1-LED Complete PCB Assembly	
PCKU-24-11	7947	74HCT138 3 TO 8 Demultiplexer	(U5)
PCKU-24-12	7948	LR74HC4511/TC74HC4511P BCD to 7 Segment Latch/Decoder/Driver	(U1~U4)
TPP2-07-32	1012	1S5277B Diode	(D1~D3)
TPP2-07-33	1002	DAN401 Quad Cathode-Common Diode Array	(DM1)
CHPU-22-56	663	100 pf. 50V Ceramic-Disc Capacitor	(C7~C10)
CHPU-21-62	665	0.01 uF 50V Ceramic-Disc Capacitor	(C2~C6)
TPP2-07-39	688	33uF 16V Al Electrolytic Axial Cap.	(C1)
TPP2-07-63	2065	Octal 1K Ohm Series Resistor Array	(RM1)
PCKU-24-16	7950	EI 12 pin Plug Connector Right Angle	(P1)
PCKU-24-17	7949	GL-8E040 7-Segment Visible Light Emitting Diode	(LED1~LED4)

WIRING HARNESS AND BODY PARTS

PART NO.	ORDER NO.	DESCRIPTION (Reference Designations)
PCKU-61-12	7932	PCK Side Decal
PCKU-01-24	7931	PCK Name Plate Overlay
MGSU-01-24	1107	MGS Name Plate Plexiglas (Clear)
PCKU-41-11	7933	UP 36P 080 Edge Connector Harness
MDSU-41-11	2367	UP 15P 062 Switch Harness
PCKG-41-11	7934	UP 12P 080 Switch Harness

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